

**Claims:**

1. A method of selecting base station antennas for connection with a mobile user terminal in a radio telecommunications network, comprising the steps of:

making test transmissions between the mobile user terminal and base station antennas,  
5 and processing the received test transmissions to determine respective signal path quality for each of the base station antennas;

wherein upon the determined signal path quality exceeding a first predetermined threshold but being less than a second predetermined threshold higher than the first predetermined threshold the mobile user terminal is connected to the corresponding  
10 base station antenna by control channels but not data channels so as to be time synchronised; and wherein

upon the determined signal path quality exceeding the second predetermined threshold the mobile user terminal is connected to the corresponding base station antenna by both control channels and data channels so as to be call connected.

15 2. A method according to claim 1, in which upon the determined signal path quality being less than the first threshold, the mobile user terminal is connected to the corresponding base station antenna by neither control channels nor data channels.

3. A method according to claim 1, in which the control channels comprise at least one control channel in each direction between the mobile user terminal and said  
20 corresponding base station antenna.

4. A method according to claim 1, in which the network comprises a base station controller, and there are multiple mobile user terminals,

in which for each mobile user terminal identifiers of the base station antennas having a signal path quality between the thresholds are recorded for reference in a first list in  
25 the base station controller, and

in which for each mobile user terminal identifiers of the base station antennas having a signal path quality exceeding the second threshold are recorded for reference in a second list in the base station controller.

5. 5. A method according to claim 1, in which, when the mobile user terminal is connected to the corresponding base station antenna by control channels but not data channels, control channel data is transmitted over control channels at a rate of less than every timeslot but sufficient to maintain synchronisation between said base station antenna and mobile user terminal.
10. 6. A method according to claim 5, in which the base station antenna indicates to the mobile user terminal that data channels are to be established by changing to sending control channel data every timeslot.
15. 7. A radio telecommunications network comprising base stations, each base station having at least one antenna, the network comprising a selector of base station antennas to be used for connection with a mobile user terminal, the network comprising a generator of test transmissions between the mobile user terminal and base station antennas, and a processor configured to process the received test transmissions to determine respective signal path quality for each of the base station antennas; wherein the selector is configured to control connections such that upon the determined signal path quality exceeding a first predetermined threshold but being less than a second predetermined threshold higher than the first predetermined threshold the mobile user terminal is connected to the corresponding base station antenna by control channels but not data channels so as to be time synchronised, and wherein upon the determined signal path quality exceeding the second predetermined threshold the mobile user terminal is connected to the corresponding base station antenna by both control channels and data channels so as to be call connected.

**8.** A network according to claim 7, in which the selector is configured to control connections such that upon the determined signal path quality being less than the first threshold, the mobile user terminal is connected to the corresponding base station antenna by neither control channels nor data channels.

5   **9.** A network according to claim 7, in which the network comprises a base station controller, and there are multiple mobile user terminals,

in which for each mobile user terminal identifiers of the base station antennas having a signal path quality between the thresholds are recorded for reference in a first list in the base station controller, and

10      in which for each mobile user terminal identifiers of the base station antennas having a signal path quality exceeding the second threshold are recorded for reference in a second list in the base station controller.

**10.** A network according to claim 7, in which, when the mobile user terminal is connected to the corresponding base station antenna by control channels but not data

15      channels, control channel data is transmitted over control channels at a rate of less than every timeslot but sufficient to maintain synchronisation between said base station antenna and mobile user terminal.